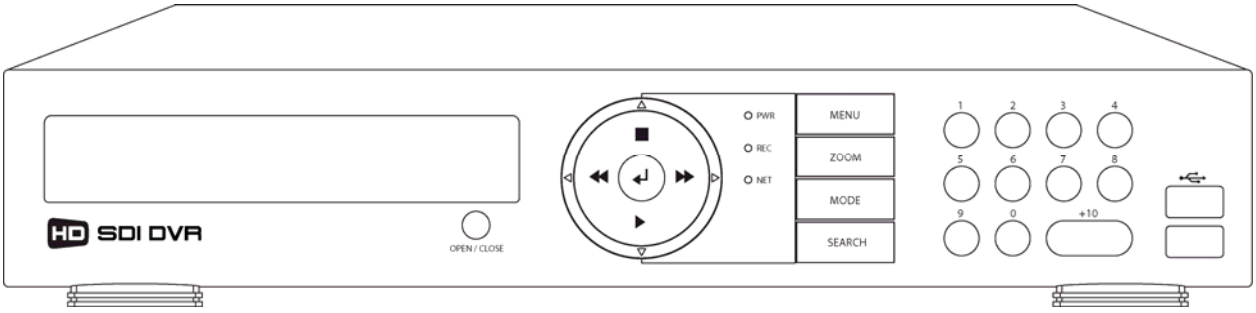
HD SDI DVR

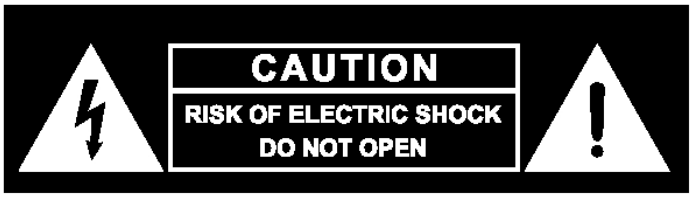
USER'S MANUAL



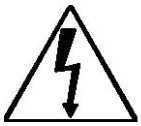
CE FC RoHS

Important Safety Instructions

- Read and Keep these instructions
- Heed all warnings
- Follow all the instructions
- Do not use this apparatus near water and Clean only with dry cloth
- Do not install near any heat sources such as radiators, heat registers, or other apparatus that produce heat
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Unplug this apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE.
NO USER-SERVICEABLE PARTS ARE INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated " dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

.

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance

FCC For Class A digital device

A CLASS A digital device that complies with Parts 15 of the FCC Rules.
Operation is subject to the following two conditions.

1. This device may not cause harmful interference, and
2. This device must accept any interference received,
   Including interference that may cause undesired operations.

Features

This HD SDI(serial digital interface) DVR allows users to have HD level of video surveillance with 720P & 1080P resolution both in live and playback. Unlike megapixel IP cameras and NVR, it doesn't require IP related expertise and can be installed under coaxial cabling.

- HD SDI DVR with H.264 compression
- HD video over coaxial cable : No latency & no loss of frame
- 120fps(PAL: 100fps) real time @ 720P, 60fps(PAL:50fps) @ 1080P
- HDMI, VGA and BNC video outputs
- VGA and BNC programmable spot outs
- Up to 4 internal SATA HDD (or 1 x ODD, 2 x HDD) and E-SATA for external storage
- Individual channel setup for recording & network stream (resolution/frame rate)
- Event text + image notification to FTP server and E-mail address
- Easy network : UPNP (Universal plug & play) support
- User control : Up to 20 users can be generated with various access authority
- Calendar/Time search & Thumbnail search
- Smart phone application (Live, PTZ, Search)

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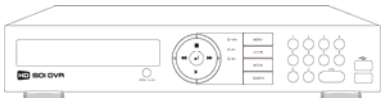
1. Product Overview

1.1 Packing Contents

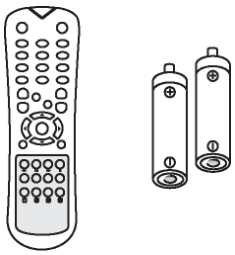
When you first open the product, please check out whether there are all contents as follows.

If any of these items is missing or damaged, contact your supplier immediately before using the product.

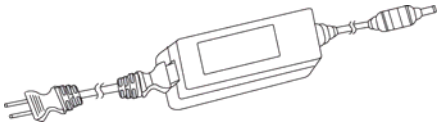
DVR product



Remote control & Battery



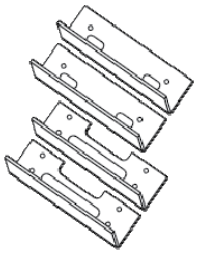
Power adaptor and cable



Software / User's Manual CD

2 x HDD bracket (1 set included in set, 1 set is extra)

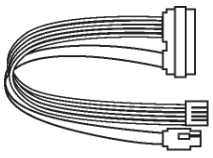
1 x DVD bracket (in set)



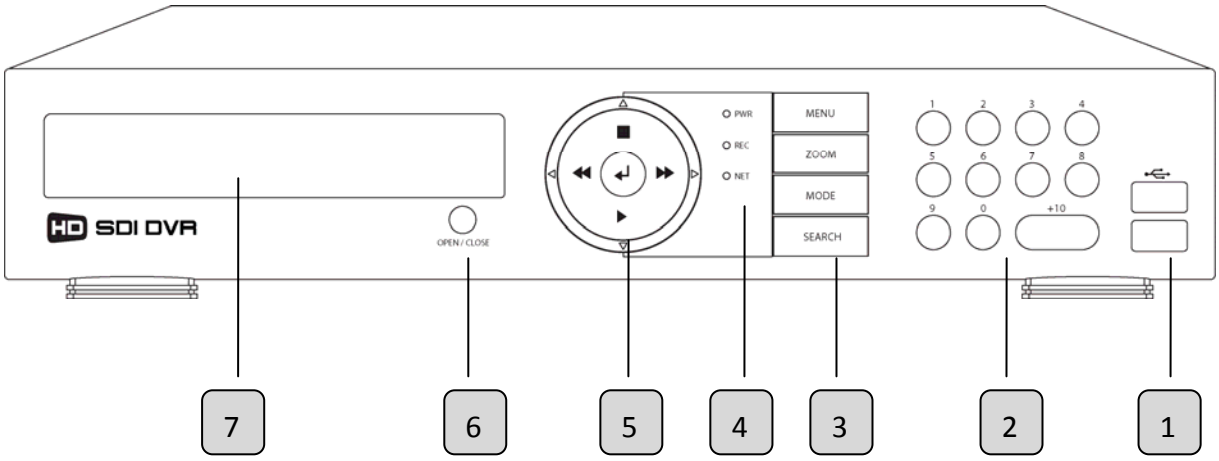
Screws

User's Manual

HDD Cable [Included in Set]

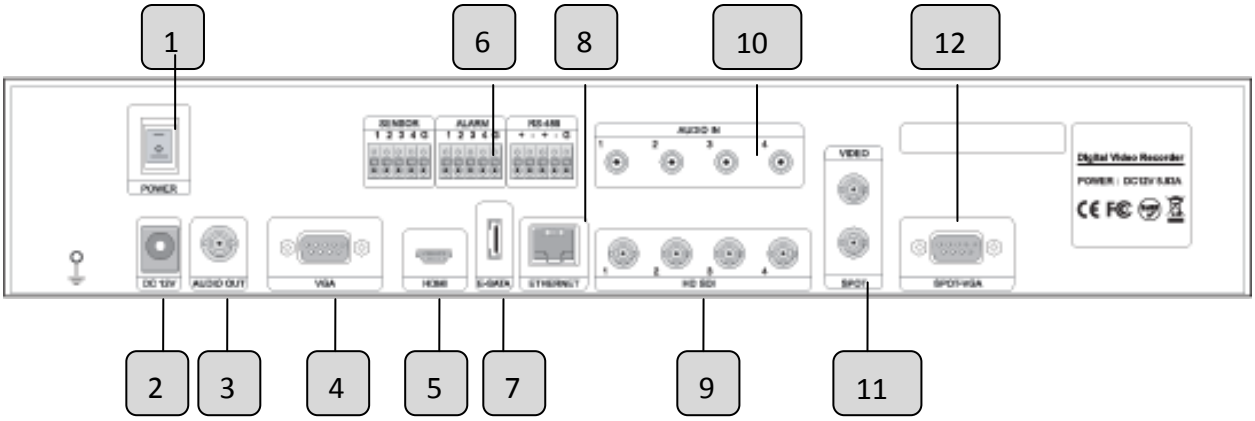


1.2 Front



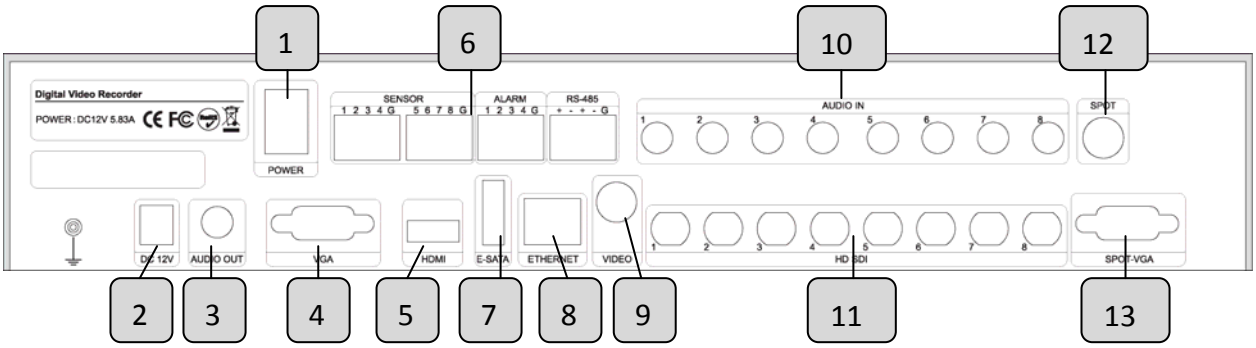
Number	Name	Function
1	USB port	Connect USB device to 2 ports
2	Channel	Select numbers to select certain channel or input numbers in menu
3	Menu	Access to main menu
	Zoom	Access directly to digital zoom mode (in Live & playback)
	Mode	Change screen split mode
	Search	Access directly to search menu
4	LED indicator	PWR : Light on when power is on REC : Light on when DVR is recording NET : Light on when a user is connected via network
5	Direction & Selection keys	Select directions in menu Play, FF(fast-forward), RW(rewind), stop/pause buttons
6	DVD open/close	Open or close DVR door
7	DVD door	DVD door

1.3 REAR – 4ch DVR



Number	Name	Function
1	Power switch	Turn on/off the product
2	DC 12V	Connect power adaptor provided with the product
3	AUDIO OUT	Connect audio out device such as speaker
4	VGA	VGA connection port
5	HDMI	HDMI connection port
6	SENSOR	Sensor input ports
	ALARM	Alarm output ports
	RS-485	RS-485 communication
7	E-SATA	E-SATA port
8	ETHERNET	10/100MB or 1GB LAN port
9	HD SDI	HD SDI type video in
10	AUDIO IN	Connect audio in device such as MIC
11	VIDEO OUT	Composite video out (BNC type)
	SPOT (BNC)	Spot out (BNC type)
12	SPOT VGA	Spot out (VGA type)

1.4 REAR – 8ch DVR

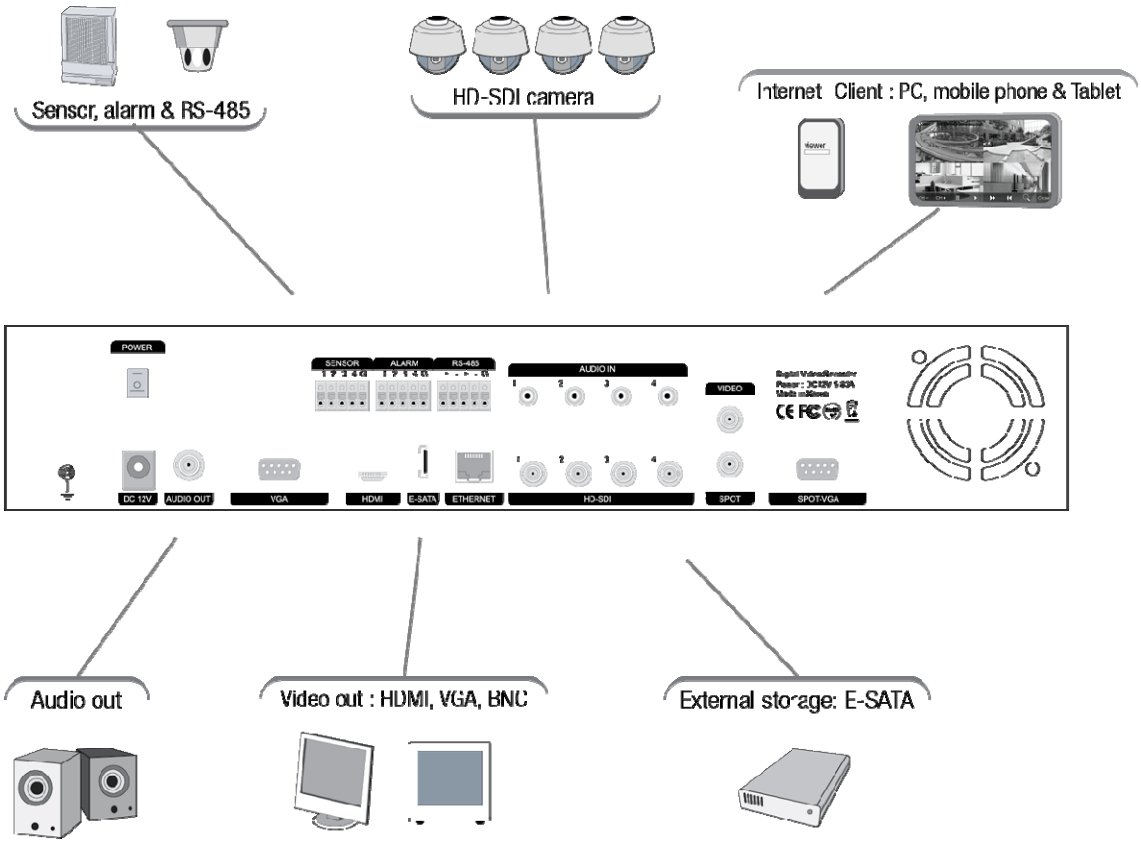


Number	Name	Function
1	Power switch	Turn on/off the product
2	DC 12V	Connect power adaptor provided with the product
3	AUDIO OUT	Connect audio out device such as speaker
4	VGA	VGA connection port
5	HDMI	HDMI connection port
6	SENSOR	Sensor input ports (8 ports)
	ALARM	Alarm output ports (4 ports)
	RS-485	RS-485 communication
7	E-SATA	E-SATA port
8	ETHERNET	10/100MB or 1GB LAN port
9	VIDEO OUT	Composite video out (BNC type)
10	AUDIO IN	Connect audio in device such as MIC
11	HD SDI	HD SDI type video in
12	SPOT (BNC)	Spot out (BNC type)
13	SPOT VGA	Spot out (VGA type)

2. Installing Product

HD SDI 4ch DVR

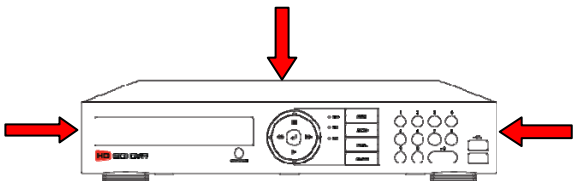
SYSTEM CONFIGURATION



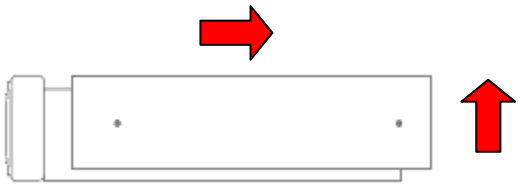
2.1. Installing HDD

- Up to 4 hard drives (without DVD RW) can be installed inside the product.
- If HDD was not installed in the product, please install HDD first as follows.
- Be careful not to be harmed by sharp edges of the product.

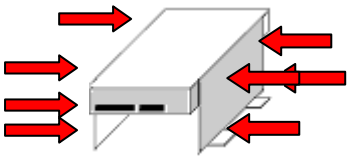
(1) Loosen screws on both sides and back to detach the product cover.



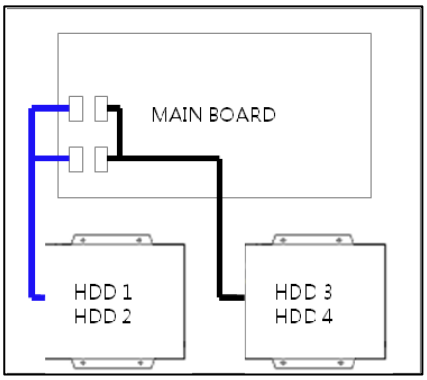
(2) Lift the end of top cover and pull out from product.



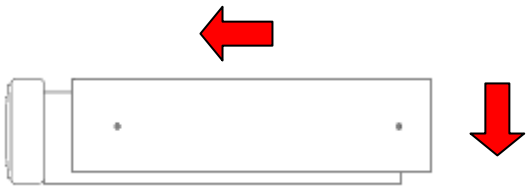
(3) Loosen screws of HDD bracket to detach from product. Put HDD in HDD bracket and tighten supplied 4HDD screws to bracket.



(4) Restore HDD bracket to product and connect HDD power cable and data cable to HDD.

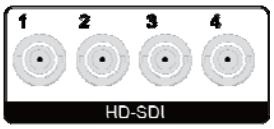


(5) Insert top cover to product as side picture Them, tighten screws again.

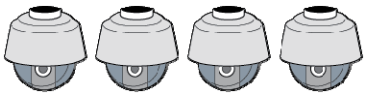


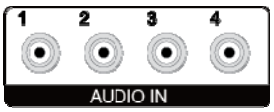
2.2. Connecting camera and audio device

- Connect coaxial cable (BNC type) into VIDEO IN port on rear of the product.
- **HD SDI cabling specification: SMPTE 292M standard, 5C-HFBT or above**
- Connect RCA cable from microphone into AUDIO IN port on rear of the product.
- Connect RCA cable into AUDIO OUT port on rear of the product and into audio device.



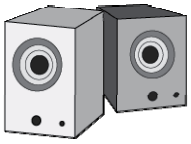
HD SDI video input





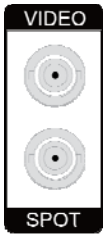
Audio IN

Audio OUT



2.3. Connecting monitor

- Connect monitors into the video out ports of the product according to interface.



VIDEO OUT (BNC)

1 x video out, 1 x spot

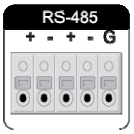
VGA OUT

1 x video out, 1 x spot

1 x HDMI OUT

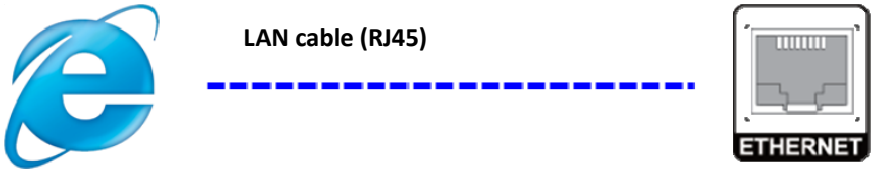
2.4. Connecting Optional device

- You can connect and control the PTZ device supporting RS-485 communication.



2.5. Connecting Network

- Connect LAN cable (RJ45) to Ethernet port on rear of the product.

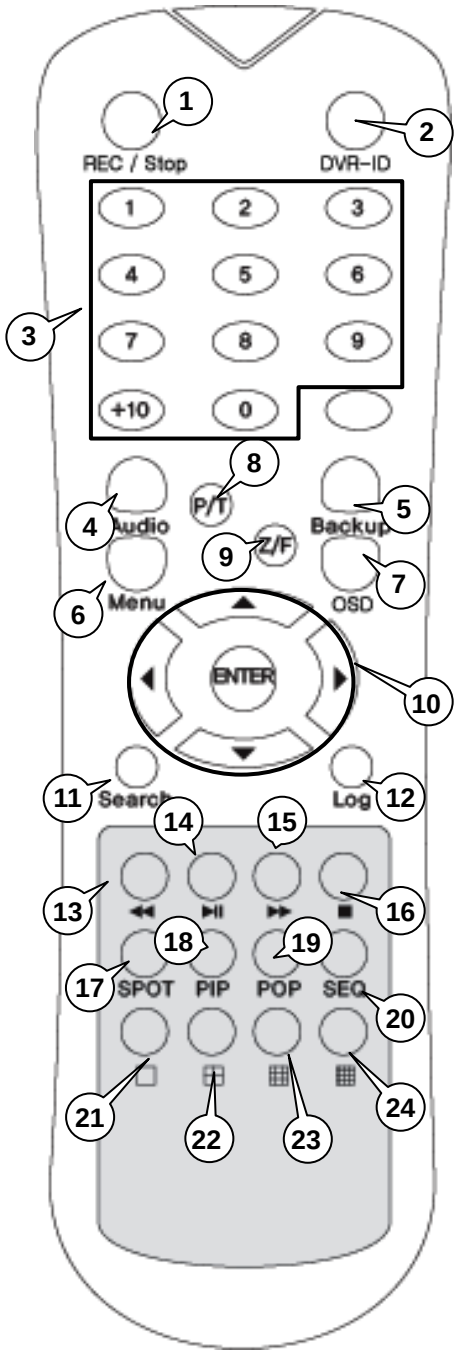


2.6. Connecting power supply

- Connect provided power cable to AC-DC adaptor.
- Connect the adaptor to DC power port on rear of the product.
- Connect AC power plug to the plug socket.

3.Controlling DVR

3.1. Remote control – Basic description



1) **REC** : Instant record button
2) **DVR ID**
3) **Number button** : Input channel number
4) **AUDIO** : Audio ON / Mute
5) **BACKUP** : Access directly to backup menu
6) **MENU** : Access to main menu
7) **OSD** : Show or Hide OSD
8) **PTZ** : Control Pan/Tilt/Zoom camera.
9) **Z/F:** Access to digital zoom mode
10) **Direction** (▲,▼,◀,▶) & **ENTER**
11) **SEARCH** : Search recorded video
12) **LOG** : Show running status of DVR system
13) ◀◀ : Reverse play
14) ▶I : Play or Pause during playback
15) ▶▶ : Fast forward play
16) ■ : Stop playback and go to Live mode
17) **SPOT** : Not Operated in this model
18) **PIP** : Go to PIP mode
19) **POP** : Enlarge specific channel in Live mode
20) **SEQ** : Show each camera rotation
21) **Full screen mode**
22) **Quad screen mode**
23) **9 Division screen mode**

    Operated only for 8ch or 16 channels
24) **16 Division screen mode**

    Operated only for 16 channels

3.2. Remote control – Additional descriptions

3.2.1. Full screen mode

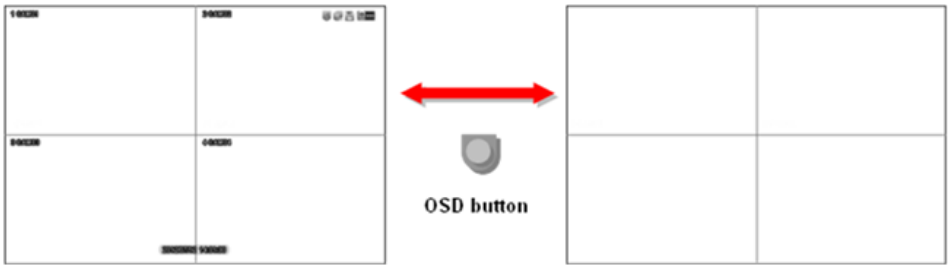
- Press ☐ button. Whenever pressing ☐ button, screen will go to next screen.
- Press desired numeric button of remote controller.

3.2.2. Quad screen mode

- To see quad screen mode, press ⊞ button.

3.2.3. OSD Hide or Show

- Press OSD button of remote controller to appear or disappear OSD.



3.2.4. Sequence mode

- If you press **SEQ** button in Full screen split, screen will rotate automatically.
- Default value of cannel rotating interval is 2 or 3 seconds.
- User can select changing interval value from 1 to 99 seconds.
- User can select desired channel to display

3.2.5. Digital-ZOOM

- DVR supports up to 10 times (x10) digital zoom
- Select ZOOM icon or ZOOM button on remote control
- Using mouse, drag certain area to enlarge image
- To disable to digital zoom mode, mouse right-click

Normal mode

Digital zoom mode x10

3.3. MOUSE

- System supports USB MOUSE
- Just Insert USB mouse into the product, then DVR will detect it automatically.
- Inquire your supplier if certain USB mouse doesn't work properly.

3.3.1. Change screen mode

Mouse left-click is for selecting an item on menu. Right-click in live goes to main menu.

- Double left-click on a specific channel, screen will change into full screen mode.
  With double-click in full screen mode, screen will go back to previous mode.

4. Operation

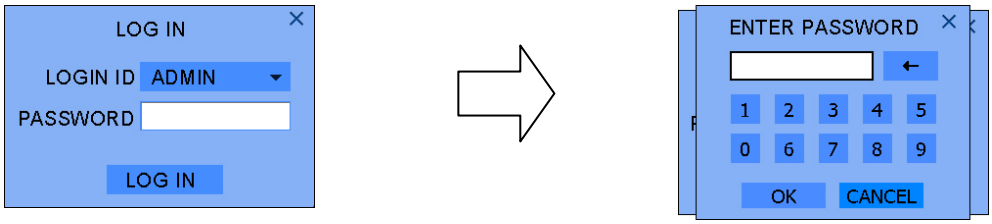
PLEASE MAKE SURE THAT THE HDD MUST BE INSTALLED AT FIRST FOR RECORDING BEFORE USING DVR.

4.1. Turning on

- Connect Power Adaptor provided with the product into power DC terminal.
- Press ON of the switch button in the rear of product.

4.2. Initial screen

Log-in window will pop up after booting is over.

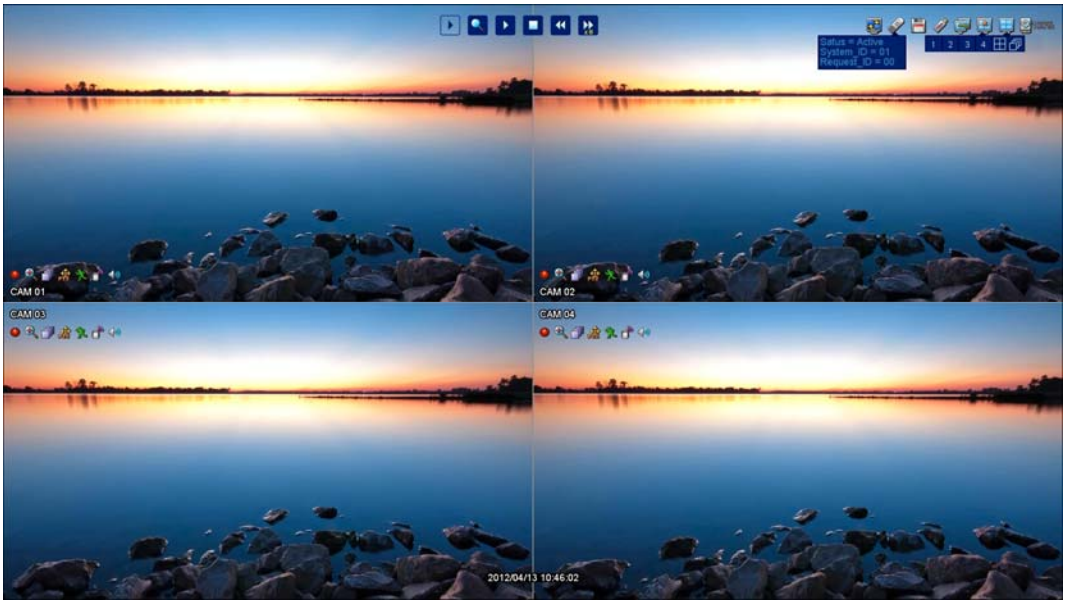


Please move the pointer into password window with mouse or up/down key of remote controller, and then press enter button in remote control or right button of mouse.

If you first start DVR, input Initial password is “0000” (4 zeros). After first login, it is recommended that you change password. In order to change password, please refer to page 39, USER.

4.3. Screen Layout

You can see the below items according to your selection on function.



4.3.1. Icons in Live Display Mode

In Live display mode, icons will be indicated to notify the system mode or status.
Below are the icon categories, which are indicated on the monitor.

Icon for system		Icon for each channel	
	Selects specific 1ch with full screen		When Motion Detected
	Screen-Division mode		When Sensor Activated
	Start/stop Panic(manual) record		Channel with audio connected
	HDD capacity usage status		When PTZ mode entered
	When USB memory stick & HDD is inserted into DVR		When channel is recording
	When DVR is connected via network		When panic record is activated
	When DVR is not connected via network		
	System ID for remote control		
	Check auto-backup with external USB HDD (status, capacity)		
Icon in full screen mode			
	Channel sequence mode		
	Digital x10 Zoom		

4.3.2. Controlling playback using the buttons

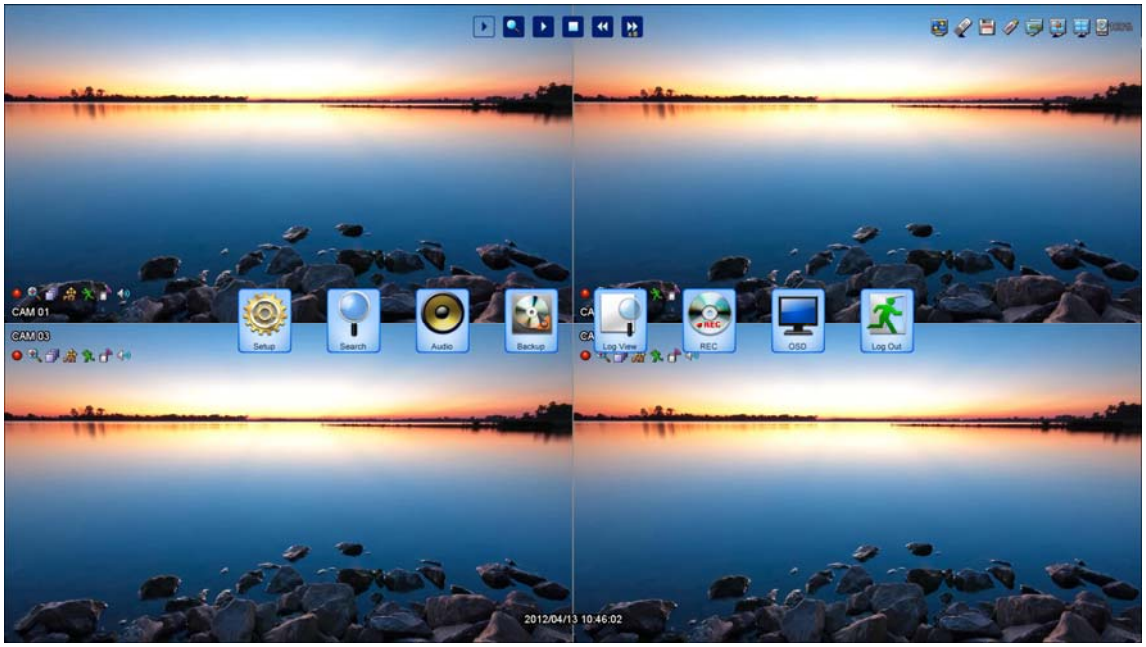
In search mode, the status will be shown in the upper side of screen. You can control playback using the buttons.

	Current status	- This icon shows the current status in playback. - If you select ▶, the mark will be ▶, - The mark will be changed if you select another button Ex) If you select FF (fast-forward), ▶▶ will be shown.
	Backward	- Select backward and control speed (x2, x4, x8, x32 and x128) - In pause status, this button moves frame by frame reversely
	Play	- Play button. Select this button in pause mode
	Pause	-Pause button. Select this button in play, rewind or FF mode.
	Fast Forward	- Select fast-forward and control the speed (x2, x4, x8, x32 and x128) - In pause status, this button moves frame by frame forward.
	Stop	Stop the playback and go to Live mode Menu button also stop playing.
	Search menu	- Selecting this button, the Search sub-menu will pop up
	Digital zoom	-Digital zoom button in playback. Select this button to 1ch full screen mode
	Play speed	-Indicates speed of rewind or fast-forward
	Backup	-Access to backup function.

5. MENU

5.1. Access to menu

Press MENU button on front keys/remote control or right-click using mouse.



Before access to main menu, DVR asks you login ID and password.

When you first start DVR, input ADMIN for ID and 0000 for password as Initial ID & password are ADMIN & 0000 respectively.

5.2. SETUP

*Sub menus of SETUP

DISPLAY	CAMERA	RECORD	EVENT	STORAGE	SYSTEM
OSD	GENERAL	PARAMETER	MOTION	HDD FORMAT	CONFIG
LIVE-SEQ(FULL)	PTZ	SCHEDULE	SENSOR	HDD SMART	TIME
	PRESET	GENERAL	VLOSS	AUTO BACKUP	INPUT DEVICE
	SCAN POINT		E-MAIL	**NETWORK**	USER
			FTP	SET UP	UPGRADE
			MAIL SCHEDULE	STREAM	TURN OFF DVR
			ALARM SCHEDULE	DDNS	
			FTP SCHEDULE		
			MISC		

5.2.1. DISPLAY

Configurations related to OSD can be made in OSD menu.

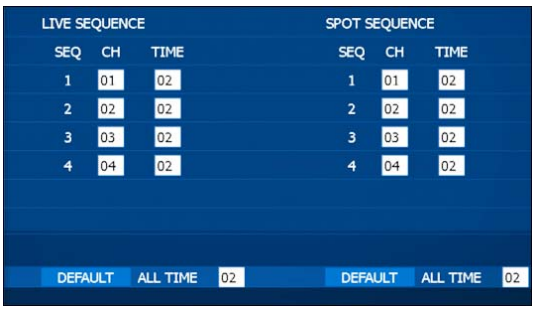
Sequence patterns of main and spot monitors can be programmed in LIVE-SEQ menu.

5.2.1.1. OSD

Select OSD items that displays on monitor and select language.

- **CAMERA NAME** - Show camera name on screen.
- **CAMERA NUMBER** – Show each camera numbers on the screen.
- **CAMERA BOARDER** – Show outline of channel.
- **LANGUAGE** – Select OSD language.
- **OSD HIDE** – Option: ALL, time bar or icon
- **AUTO HIDE** – Hide ALL, time bar or icon automatically after time-out (minute)

5.2.1.2. LIVE-SEQ(FULL)



- **LIVE SEQUENCE**: Set order of sequence channel and dwell time by second for main video out.
- **SPOT SEQUENCE**: Set order of sequence channel and dwell time by second for spot out
- **DEFAULT**: Go back to initial value
- **ALL TIME**: Apply same time for all channels
- Maximum time is 99 second

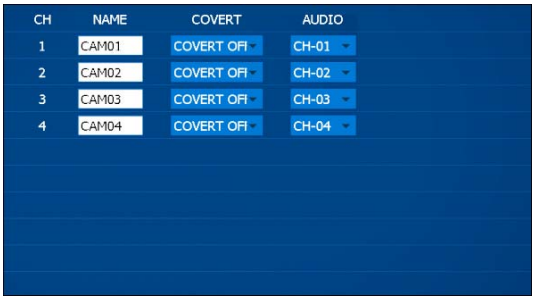
5.2. 2. CAMERA

General camera configurations such as camera name, color and covert can be made.

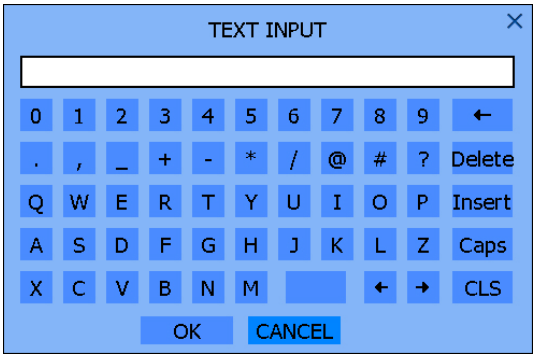
Private zone on certain cameras can be designated.

PTZ configurations can be made.

5.2.2.1. GENERAL



- **NAME**: Input name of each camera using virtual keyboard. Maximum 15 digits in English can be used.
- **COVERT**: Show or hide camera image in live mode
  ON: Hide camera, OFF: show camera
- **AUDIO**: Select connected audio channel



How to input letters or numbers on TEXT INPUT box

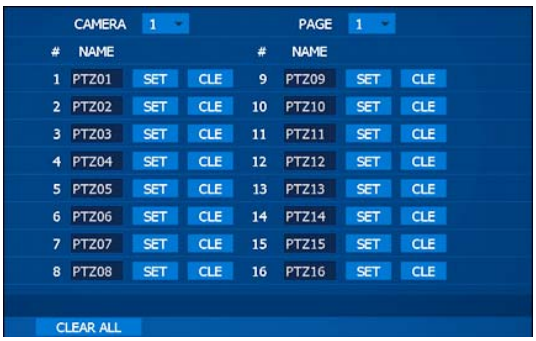
- Move the pointer to the name box (Blank) and click.
- Click letters or numbers with direction button.
- Click OK button after you complete input.

5.2.2.2. PTZ

- **ID:** Input ID of connected PTZ camera
- **PROTOCOL**: Select protocol type of PTZ camera
- **BAUD**: Select baud rate of PTZ camera

This information can be found in manual of PTZ camera.

5.2.2.3. PRESET



- **CAMERA**: Select camera to set up preset position
- **PAGE**: Go to next page
- **CLEAR ALL**: Cancel all saved presets.

① Select camera.

② Select “SET” button.

③ PTZ control screen of the camera will appear.

④ Move pan, tilt, zoom in/out to desired point.

⑤ Click **Advance** icon or Press ENTER Key in remote controller to save.

⑥ Click any other position on screen by mouse or press **MENU** Key to cancel.

If you like to cancel the setting, please click the CLE icon of the channel will be cleared.

If you click “CLEAR ALL” button, all value of channels will be cleared.

◆ **NOTE: Before using this function, please make sure that camera supports preset.**

Total 64 preset points can be saved to each channel.

You can enter position name to each saved preset position.

5.2.2.4. SCAN POINT

CAMERA 1
LIST 1
PRESET SEC # PRESET SEC
1 OFF 03 9 OFF 03
2 OFF 03 10 OFF 03
3 OFF 03 11 OFF 03
4 OFF 03 12 OFF 03
5 OFF 03 13 OFF 03
6 OFF 03 14 OFF 03
7 OFF 03 15 OFF 03
8 OFF 03 16 OFF 03
CLEAR ALL

- **CAMERA**: Select camera to set up scan point
- **LIST**: Create another SCAN list
- **PRESET:** Select desired preset potion
- **CLEAR ALL**: Cancel all saved scan points

◆ **NOTE**

In SCAN point menu, you can set up PTZ tour route(SCAN-LIST) using saved PRESET position.

You can create 4 scan lists for each camera. You should setup PTZ protocol and PRESET before setting Scan-List.

Maximum 4 SCAN lists can be set and 1 SCAN list can be composed of up to 16 preset points

CAMERA 1
LIST 1
PRESET SEC # PRESET SEC
1 OFF 03 9 OFF 03
2 OFF 03 10 OFF 03
3 OFF 03 11 OFF 03
4 ON 03 12 ON 03
5 OFF 03 13 OFF 03
6 OFF 03 14 OFF 03
7 OFF 03 15 OFF 03
8 OFF 03 16 OFF 03
CLEAR ALL

➢ Example

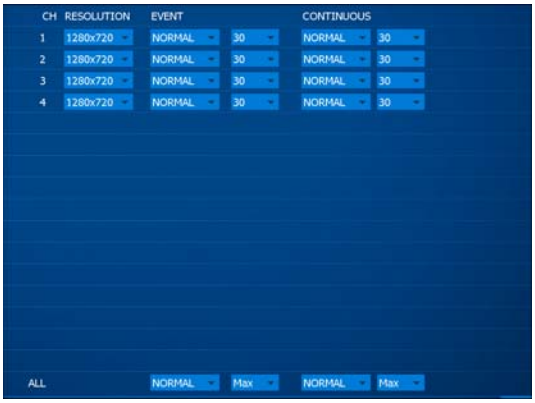
If SCAN POINT is set as left,

- CAMERA 1 will move to saved positions as below,
- PTZ04 (stays for 3sec) >> PTZ12 (stays for 3sec) >> PTZ04 (stays for 3 sec) >> PTZ12 (stays for 3 sec) >> PTZ04 (stays for 3 sec) >>……

5.2.3. RECORD

Recording setup such as parameter, schedule and pre/post recording can be made in RECORD menu.

5.2.3.1. PARAMETER


CH RESOLUTION EVENT CONTINUOUS
1 1280x720 NORMAL 30 NORMAL 30
2 1280x720 NORMAL 30 NORMAL 30
3 1280x720 NORMAL 30 NORMAL 30
4 1280x720 NORMAL 30 NORMAL 30
ALL NORMAL Max NORMAL Max

- Recording resolution

CAMERA INPUT	RESOLUTION
720P	1280 X 720
1080P	1920080

- Resolution

  -Recording resolution is determined automatically by HD SDI camera input and cannot be changed.

- EVENT

  - Select the recording picture quality and frame rate for EVENT occasions.
  - Event occasions mean when motion is detected or alarm is triggered.
  - Each channel can have separate picture quality and frame rate.

- CONTINUOUS

  - Select the recording picture quality and frame rate for continuous recording.
  - Each channel can have separate picture quality and frame rate
  - The frame rate in CONTINOUS cannot exceed that of Event mode.

  If the frame rate of EVENT is set up as 8, and that of CONTINUOUS mode cannot exceed 8.

- ALL

  Apply the same picture quality & frame rate for all channels.

◆ **NOTE: When connecting 720P camera, please make sure you turn off DVR and hook camera cable to DVR Otherwise, the unit will not recognize 1280x720 resolution and cause recording problem.**

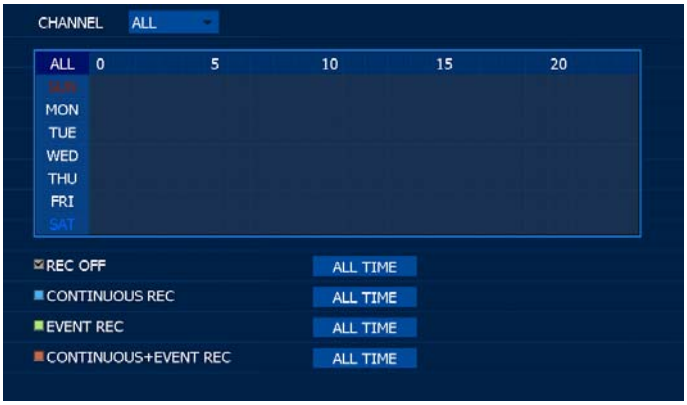
◆ **NOTE: The higher recording quality, the more HDD drive space needed.**

Record Quality	Picture Quality	Disk Space Need
BASIC	Low	Least
NORMAL	Fair	Medium
HIGH	Good	Big
BEST	Excellent	Most

5.2.3.2. SCHEDULE

DVR always records according to schedule.

Please make sure to set recording schedule during installation



- **REC OFF**: No record, just monitor during selected hours.
- **CONTINUOUS REC**: DVR records continuously during selected days and hours.
- **EVENT REC**: DVR records only when Motion/Sensor/Video Loss is triggered during selected hours.
- **CONTINUOUS + EVENT REC**: DVR records continuously or by events during selected days and hours.

  If there is no event, it will record video as continuous mode and

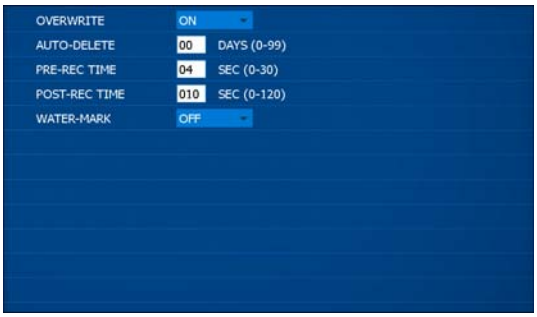
  If there is event, it will record video as event mode as you set.

  If you use mouse, you can select them by drag function.

◆ **NOTE**: Recording schedule can be set by hour.

The time in the first column of each line means 00:00 ~00:59.

5.2.3.3. General



- **OVERWRITE:** When HDD gets full, the oldest record data will be erased and replaced (overwritten) by new data.

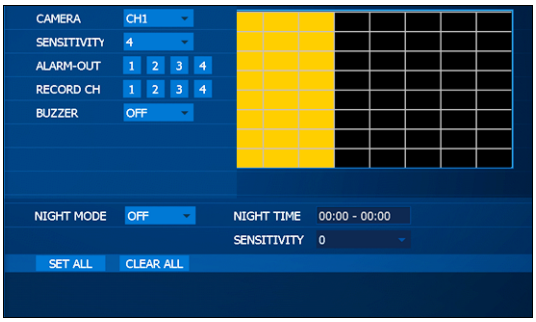
  ON: Use OVERWRITE, OFF: Not use OVERWRITE

  If it is set OFF, DVR stops recording when HDD gets full.
- **AUTO-DELETE:** HDD only keeps the data of selected
- **PRE-REC TIME:** Recording time before events (0~5 sec)
- **POST-REC TIME:** Recording time after events (0~120 sec)
- **WATER-MARK:** Generate water-mark in recording data Authenticity can be verified in backup-viewer software.

5.2.4. EVENT

Configurations regarding events can be made.

5.2. 4.1. MOTION



- **CAMERA:** Select camera for motion setup
- **SENSITIVITY:** Adjust motion sensitivity from 0~9 The higher number, the more sensitive detection
- **ALARM-OUT:** Select alarm-out number which will be triggered when motion is detected.
- **RECORD CH:** Select channels which will record when motion is detected.
- **BUZZER:** Set ON/OFF for buzzer when motion is detected
- **NIGHT MODE:** Set separate sensitivity for day and for night. This option can be used in order to avoid false motion event caused by camera noise at night.
- **SET ALL:** All area (8x8 Grid) will be enabled for motion detection.
- **CLEAR ALL:** All area (8x8 Grid) will be disabled for motion detection.

5.2.4.2. SENSOR

SENSOR
TYPE
RECORD
ALARM-OUT
BUZZER
1 NO 1 2 3 4 1 2 3 4 OFF
2 NO 1 2 3 4 1 2 3 4 OFF
3 NO 1 2 3 4 1 2 3 4 OFF
4 NO 1 2 3 4 1 2 3 4 OFF
ALL NC 1 2 3 4 1 2 3 4 OFF

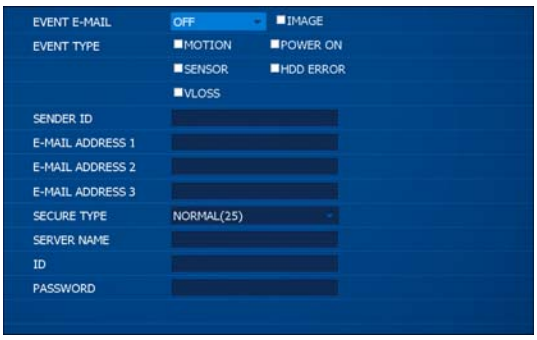
- **TYPE:** Select NO(Normal open)/NC(Normal closed)
- **RECORD:** Select camera channels which will record when sensor is activated.
- **ALARM-OUT:** Select alarm-out number which will be triggered when sensor is activated.
- **BUZZER:** Set ON/OFF for buzzer when sensor is activated.

5.2.4.3. VLOSS

- **ALARM-OUT:** Select alarm-out numbers that will be triggered when video loss occurs.
- **BUZZER:** Set ON/OFF for buzzer when video loss occurs.
- **ALL:** Apply the same settings to all channels.

5.2.4.4. E-MAIL

DVR can send e-mail notification when events occur.



- **EVENT E-MAIL:** Select ALL time or SCHEDULE for email notification
- **IMAGE:** Check the box then DVR sends image as well as text when events occur.
- **EVENT TYPE:** Select event type from MOTION, POWER ON, SENSOR, HDD ERROR, VLOSS
- **SENDER ID:** DVR sends email with this name
- **E-MAIL ADDRESS:** Input up to 2 email addresses.
  - Example: anyone@gmail.com
- **SECURE TYPE**

  -NORMAL: Standard email transfer, Port 21

  -SSL(485): Secure email transfer, Port 485

  -TLS(587): Secure email transfer, Port 587
- **SERVER NAME:** In case of using SSL or TLS, input SMTP server name
- **ID/PASSWORD:** In case of using SSL or TLS, input ID and password of SMTP server

◆ **NOTE: You can find SMTP server information usually from POP3/SMTP, IMAP/SMTP setup menu of the server. Otherwise, you need to ask the server manager.**

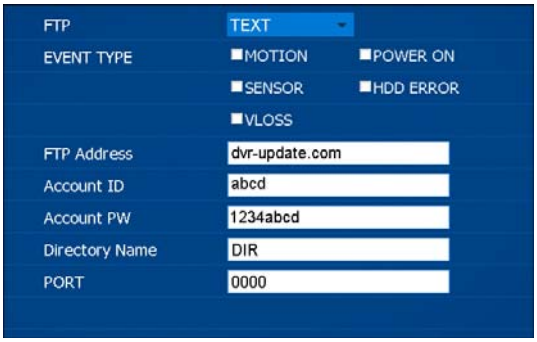
➢ **EXAMPLE: If you have an account in Gmail, Input smtp.gmail.com in SERVER NAME and ID/PASSWORD of your Gmail account. If normal is selected, you don't need to input in SERVER NAME and ID/PASSWORD.**

➢ **EXAMPLE: Email message**

From : DVR@dvr.com
To : anyone@gmail.com
Sent: Friday, July 24, 2011 6:11 PM
Subject: EVENT MESSAGE
[2011/07/24 18:10:11] [testdvr/192.168.001.121] MOTION ch 1 ON

5.2.4.5. FTP

DVR can send text + image to designated FTP server when events occur.

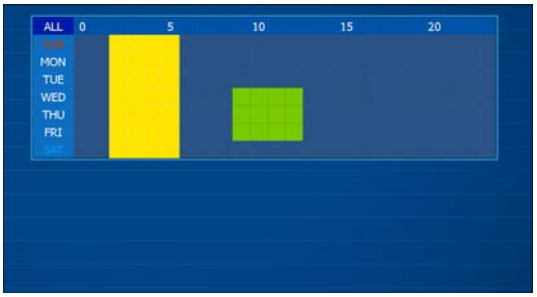


- **FTP:** Select OFF,TEXT or TEXT + IMAGE
- **EVENT TYPE:** Select event type to send to FTP.
- **FTP address:** Input IP address or domain name of FTP server.
- **Account ID:** Input ID to access FTP server
- **Account PW:** Input password to access FTP server
- **Directory Name:** Directory of FTP server that will save transferred text or image
- **PORT:** Input port number to use transfer to FTP FTP normal uses port 21.

5.2.4.6. E-MAIL/ALARM/FTP SCHEDULE

Make a schedule for e-mail transfer, alarm-out and ftp transfer for events.

Schedule can be arranged by day and by hour. Only during checked day and time, e-mail will be sent and alarm-out will be activated and ftp transfer will work.



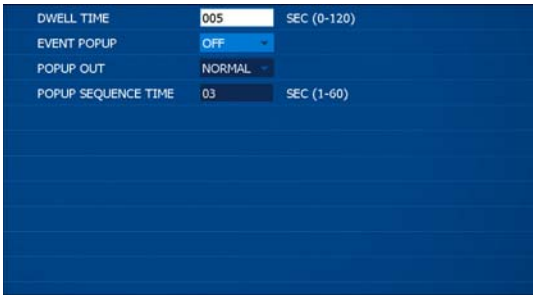
- **E-Mail schedule:**

  Select day & hour (Mouse drag/drop)
- **Alarm-out schedule:**

  Select day & hour (Mouse drag/drop)
- **FTP schedule:**

  Select day & hour (Mouse drag/drop)

5.2.4.7. MISC



- **DWELL TIME:** Dwelling time for alarm-out
- **EVENT POPUP:** Channel where event occurs pops up in full screen mode.
- **POPUP OUT**

  NORMAL: Popup in main monitor

  SPOT: Popup in spot monitor
- **POPUP SEQUENCE TIME:** Popup dwelling time

◆ **Note: if event occurs during dwell time of another event, dwell time will be ignored and newer event will pop up**

5.2.5. STORAGE

Up to 4 internal hard drives can be installed in the unit. Additionally 1 E-SATA hard drive can be attached to the unit using E-SATA port in the rear.

5.2.5.1. HDD FORMAT

HDD must be formatted when installed in order to record properly.

- Select HDD to format and click **FORMAT** button.
- When format is completed, DVR will reboot automatically.
- Time to format can be different depending on size of HDD but it usually takes a few minutes to complete.
- E-SATA information is always indicated after internal hard drive(s).

5.2.5.2. HDD SMART

Temperature of HDD can be checked.

If the temperature gets higher than certain point, DVR can notify user of that.

- Select ON in **SMART**
- **TEMPERATURE THRESHOLD**

  Set the limit temperature of HDD
- **INSPECTION CYCLE**

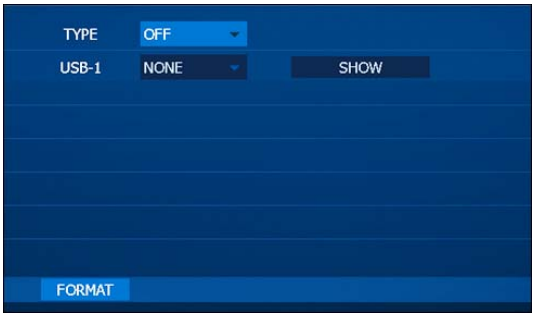
  Set the interval to check HDD temperature

  Options: Every 10 minutes, Hourly and Daily
- **DAILY TIME**

  In case you select “Daily” in inspection cycle, set time to check HDD temperature during a day.
- **ALARM OUT**

  Select alarm out ports which will activate when HDD temperature exceeds over set temperature threshold.
- **BUZZER:** Select ON/OFF of buzzer sound when HDD temperature exceeds over set temperature threshold.

5.2.5.3. AUTO-BACKUP



- TYPE

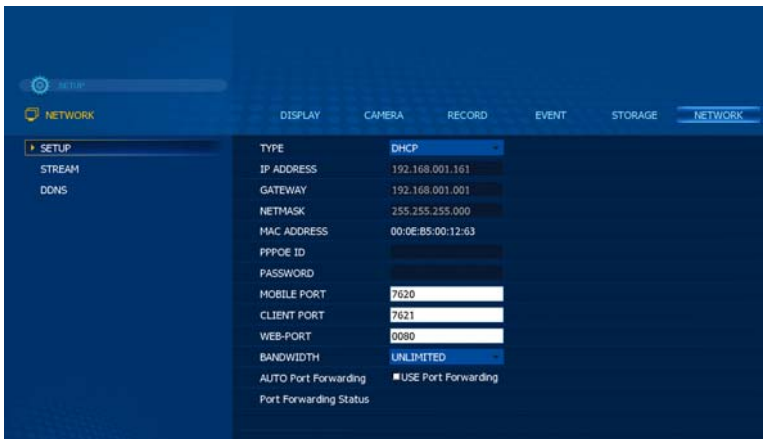
  Once USB HDD is connected to DVR, HDD status is indicated. Recording file list can be checked by selecting SHOW.

  EXTEND: When internal HDD(s)(including E-SATA HDD) gets full, HDD starts to overwrite and eldest data will be erased from internal HDD and saved in USB HDD at the same time.

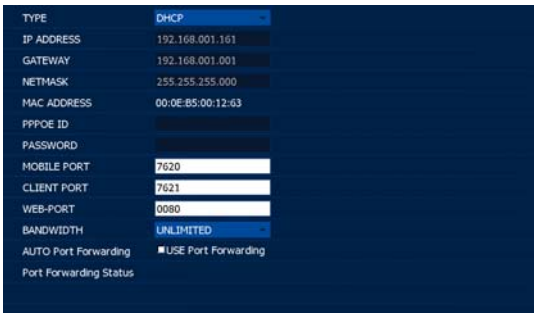
  MIRROR: Same data of internal HDD will be recorded in USB HDD

  INTERNAL: To use this function, internal HDD and E-SATA must be installed. Internal HDD and E-SATA will have the same data as RAID 1.

5.2.6. NETWORK



5.2.6.1. SETUP



- **TYPE:** Select network type among STATIC, DHCP and ADSL(PPPOE)
- **DHCP:** DVR automatically gets IP address, gateway and subnet mask.
- **STATIC:** Check your network environment and input IP address, gateway and subnet mask manually.
- **ADSL:** Input PPPOE ID and PASSWORD.
- **MOBILE PORT:** Port that is used for jpeg transfer Smart phone application uses this port.
- **CLIENT PORT:** Port that CMS uses.
- **WEB-PORT:** Port that web viewer uses.

◆ **All the ports numbers can be input from 0001~9999. Each port must not have identical port numbers.**

- **BANDWIDTH:** Control up to unlimited bandwidth
- **AUTO port forwarding:** Check port forwarding for network connection from outer network.

◆ **Router itself should support UPNP function**

5.2.6.2. STREAM

When dual stream is activated, DVR sends separate network stream of resolution, picture quality and frame rate. When dual streaming is set OFF, DVR should send stream according to resolution, picture quality and frame rate set in recording parameter.

According to HD SDI video input resolution (1080P or 720P), 1080P supports 960*540 & 480*270 for network resolution and 720P supports 640*360 & 320*180 for network resolution.

Resolution	Normal	Frame
960*540 480*270 640*360 320*180	Basic Normal High Best	1, 2, 4, 8, 15, 30

5.2.6.3. DDNS

DVR supports DDNSCCTV.COM, DDNSCCTV(AUTO), DYNDNS.COM and NO-IP.COM for DDNS connection.

- Using DDNSCCTV.COM(AUTO)

  If you choose DDNSCCTV.COM(AUTO) in SERVER, DVR creates HOST NAME using DVR using MAC address of DVR.

  1) Click DDNSCCTV.COM(AUTO) in SERVER
  2) Then USER ID, PASSWORD and HOST NAME are generated automatically using MAC address.
  3) USER ID, PASSWORD and HOST NAME are formed in DVR + last 6 letters of MAC address

  EX) If MAC address of DVR is 00:0E:B5:02:8A:5F, USER ID & PASSWORD are dvr028a5f and HOST NAME is dvr028a5f.ddnscctv.com

- **Using** DDNCCTV.COM, DYNDNS.COM or NO-IP.COM
  - **SERVER:** Select DDNS server
  - **USER ID:** Input DDNS server account ID
  - **PASSWORD:** Input DDNS server account password
  - **HOST NAME:** Input domain(host) name that you made at DDNS server
  - **CONNECT:** Click the button to check connection to DDNS server. If connection is ok, STATUS shows DDNS OK

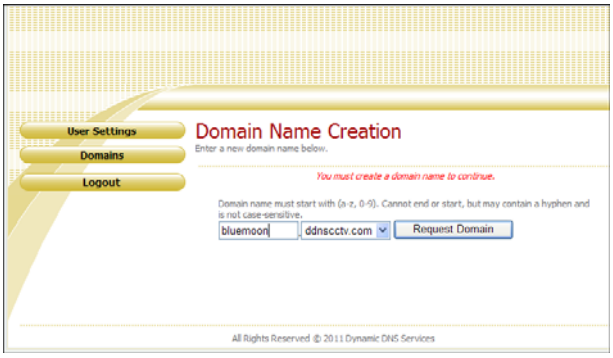
◆ **NOTE: To use DDNS function, you must first go to www.ddnscctv.com, www.dyndns.com or www.no-ip.com on PC and create an account and make a domain (host) name.**

◆ **NOTE: If DDNS connection fails, check if all information has been input correctly (especially USER ID and PASSWORD) and check network status.**

◆ **How to register DDNSCCTV**

- Input http://ddnscctv.com on web browser of PC to use DDNS service before you make configuration on DVR

- Click Registration button if you don't have an account.
- Fill in E-mail address, password, name and etc. Then, click Submit button


User Settings
Domains
Logout
Domain Name Creation
Enter a new domain name below.
You must create a domain name to continue.
Domain name must start with (a-z, 0-9). Cannot end or start, but may contain a hyphen and is not case-sensitive.
bluemoon
ddnscctv.com
Request Domain
All Rights Reserved © 2011 Dynamic DNS Services

- Input domain name you wish to create and click Request Domain button.
- Domain name can be created with combinations of alphabets, numbers and marks.
  (You must not put a mark on first letter of domain name.)
- Click Logout button after domain name has been successfully registered.
- You can sign in with E-mail and password you registered.

◆ DDNS setup on DVR

① Move to SETUP → NETWORK → DDNS

② Select DDNSCCTV.COM (3 options : DDNSCCTV.COM, NO-IP.COM, DYNDNS.COM)

③ Input E-mail address & password you registered at http://ddnscctv.com on USER ID and PASSWORD.

④ Input domain name you registered at http://ddnscctv.com on HOSTNAME.

◆ DDNS use

Input domain name you registered on web browser.

➢ Example: http://abc.ddnscctv.com

For WAN connection, DVR web port/client port should be forwarded. (Port-forwarding)

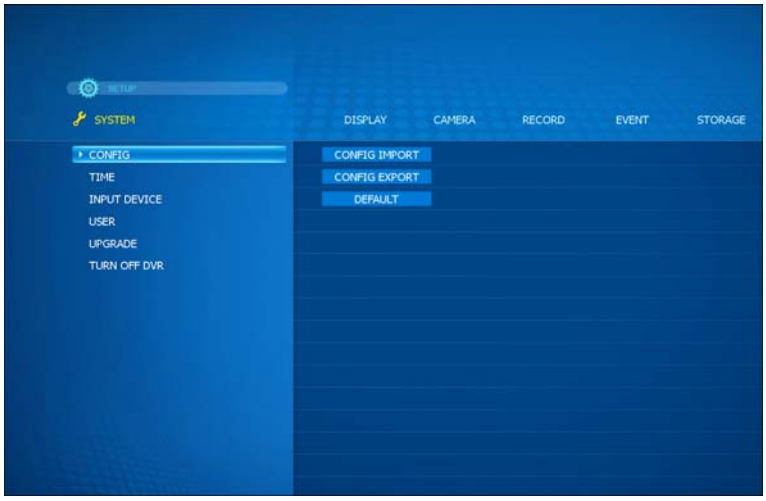
In this case, input : (colon) web port.

➢ Example: If web port is set 1000 on DVR, http://abc.ddnscctv.com:1000

5.2.7. SYSTEM

Configurations for time, user and etc. can be made.

Software version can be checked and upgrade process can be made.

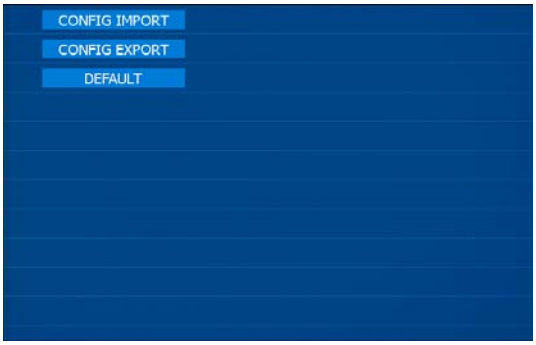


5.2.7.1. CONFIG

System setting values from one DVR can be copied to others.

Insert USB device into USB port of DVR to import (load) or export (save) the setting values.

CONFIG IMPORT & CONFIG EXPORT can be used to make several DVRs to have the same setting values.



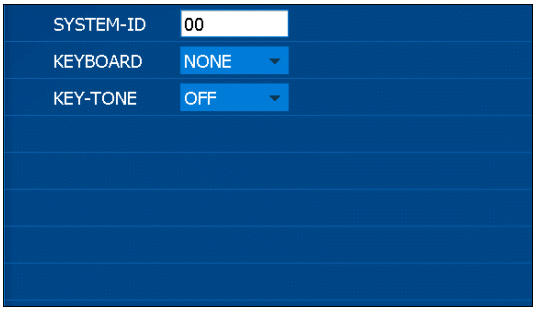
- **CONFIG IMPORT:** Load the saved configuration file from USB device
- **CONFIG EXPORT:** Save the configuration file to USB device to copy it to another DVR
- **DEFAULT:** Change all configuration values back to factory default.

5.2.7.2. TIME

- **DATE FORMAT:** Select date format
  YY/MM/DD MM/DD/YY DD/MM/YY
- **TIME FORMAT:** 24HOURS or AM/PM
- **TIME ZONE:** Select time zone of your location
- **TIME SYNC:** System time will be synchronized with selected time server if it is turned ON.
- **SERVER IP:** Input IP or domain name of time server.
  Click TEST if connection with time server is OK.
  DVR checks time server for correct time every 1 hour.

◆ Example: time.bora.net (OK),
http://time.bora.net (NOT OK)

5.2.7.3. INPUT DEVICE



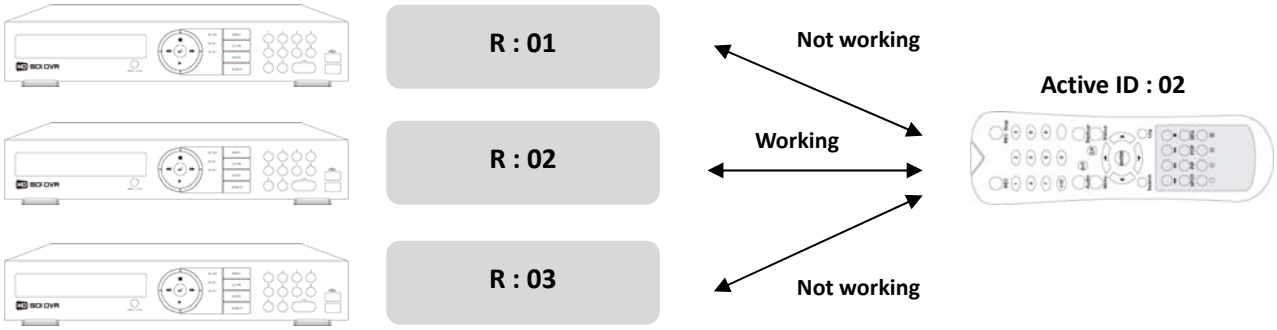
- **SYSTEM-ID**: Input the number that you want to register in this DVR.
- **KEYBOARD:** DVR system can be connected with control keyboard.
- **KEY-TONE:** Beep whenever button is pressed if ON is selected.

◆ **How to set up System-ID status**

- System-ID status shows whether the system will accept key from remote-control or not.
- SYSTEM-ID is used when user operates several systems with one remote control.
  SYSTEM- ID will be displayed when SYSTEM- ID is other than 0(zero).
- By using DVR-ID button of remote control, remote control can be matched with SYSTEM- ID, or if SYSTEM- ID is 00, system-ID is not displayed and system accept key from remote controller.
- If SYSTEM- ID color is Yellow, the system accepts remote-control key input.
- If SYSTEM- ID and Active-ID are not matching, SYSTEM- ID color will be Red and the system does not accept remote-controller key input.(No beep)
- How to match SYSTEM- ID by remote controller

  (1) Press DVR-ID button of remote controller.(You can hear short double-beep.)

  (2) Then, press desired System-ID by using 2 numeric button. (E.g. 02 or 03 or 01)



5.2.7.4. USER

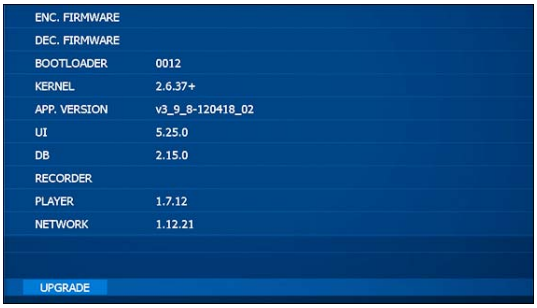
There are 2 fixed users, ADMIN & NETUSER. Their name & access authority cannot be changed. Additionally, you can create up to 20 more users and give different access authority level to each user.

- **USER –** There are two unchangeable user IDs (ADMIN, NETUSER), to create new user or modify settings of existing users, click arrow button.

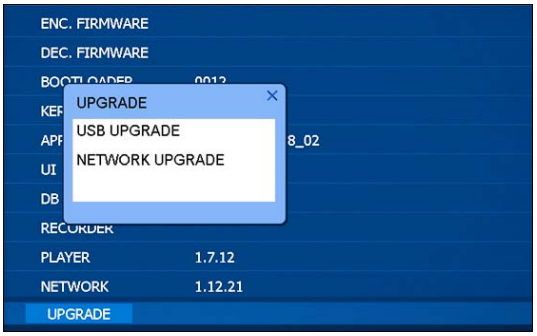
- **PASSWORD –** Initial password for each user is set '0000'. When you create a new user, make sure that you have to enter new password and do not forget the newly input password. Up to 8 digits of numbers can be used for password (EX: 123456)
- **SETUP –** Check this box then the user is authorized to go into setup menu
- **DVR FUNCTION–** Click DVR function button of REC (Recording setup), PLAY (SEARCH), BACKUP and PTZ (Control) to give each user access authority.
- **NETWORK –** Check this box then the user is authorized to access to DVR via network (Web, CMS or mobile)
- **COVERT CH –** Select covert channels by each user. Marked channels will be hidden by the user
- **TIME OUT –** When this is set to ON, LOGIN window will re-appear after entered time from any signal input. If you want to log out, you need to go to MENU and select LOG OUT like right picture.
- **MONITOR –** First select ON to give monitoring authority to each user. Then click CH button to Select monitoring channel the user can access.

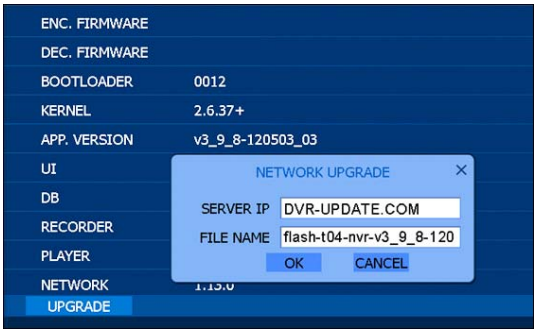
5.2.7.5. UPGRADE

You can check version information of software and firmware upgrade can be done.



- **USB upgrade:** Upgrade using USB device
- **Network upgrade:** Upgrade via network





◆ **USB UPGRADE**

Please select USB upgrade in upgrade window

① Copy provided firmware file to your USB memory stick

② Insert USB Memory which includes Firmware into USB Port.

③ Enter UPGRADE button to upgrade firmware, then small windows will appear.

④ Please click OK Icon and the message dialogue to confirm will popup,

⑤ And please click OK, or CANCEL to proceed.

⑥ It will take some minutes to upgrade, and then DVR will be rebooted automatically after upgrade is finished.

◆ **Network upgrade**

Please select network upgrade in upgrade window

① Check out whether Server IP and FILE NAME are correct.

If shown information is wrong, correct SERVER IP and FILE NAME and press ENTER button to input new information by text input Dialog box.

NOTE : Make sure the information of Server IP & File name through your supplier.

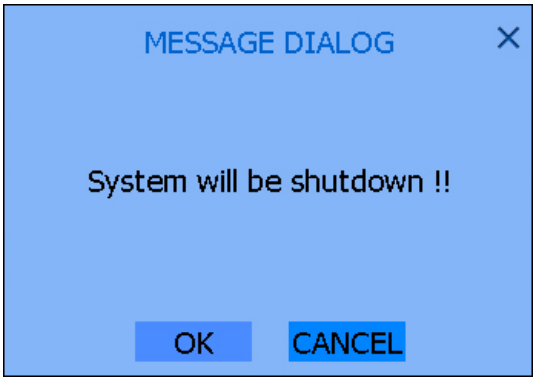
② Select OK and press ENTER button to start S/W upgrade.

After completing upgrade, the system will reboot automatically.

5.2.7.6. TURN OFF DVR

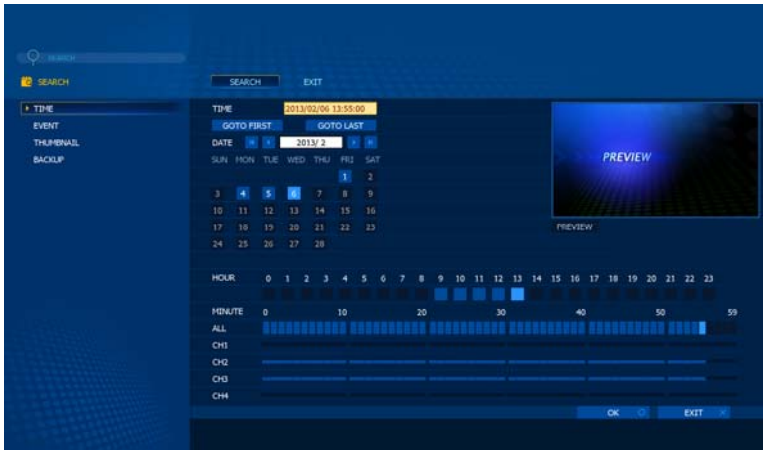
Select TURN OFF DVR and software of DVR will be shutdown.

In order to completely shut down DVR, turn off the power switch in the rear.



5.3. SEARCH

Time search using calendar/time bar and event search using event logs are supported.



5.3.1. SEARCH BY TIME

- Select date on calendar
- Select hour & minute on time bar

  Data on minutes is displayed by ALL and each channel
- Click “PREVIEW” button after selecting minute and channel no. on then playback of that channel starts on the small window.

  Click “PLAY” while running preview and it enlarges into full screen.
- To watch playback without preview, just click “PLAY” after selecting minute.
- GOTO FIRST/ GOTO LAST: Playback of earliest data/ latest data.

◆ **NOTE:**

Dates with recording data are indicated in yellow. Hour/minute with recording data are indicated in bright blue

5.3.2. SEARCH BY EVENT

- Select **DATE** & **TIME** to get event logs
- Select CH to get event logs
- Select **EVENT TYPE** to get event logs
- Select **SEARCH** button and event log list will be written.
- **<PGUP, >PGDN**: Page up & down of list
- **<<FIRST, >>LAST**: Go to first page or last page of list
- Click an event log on list then DVR goes to the time when the event happens in search mode.

5.3.3. THUMBNAIL SEARCH

Thumbnail search is effective and quick search option. You can search recorded file of certain channel by displaying 9 screens at a time by selected time interval.

- CH: Select channel number to view.
- TIME: Select time to start “Thumbnail search”
- INTERVAL: Select time interval from 1 sec, 10sec to 1 minute & 1 hour.
- VIEW: Capture image by selected interval starting from selected time shows up

  If 1 hour is selected, each screen shows by 1 hour of the same channel.
- NEXT, PREVIOUS: Previous or next page of recorded file by selected interval

Seeing the capture image, double-click on certain screen then it will be divided in smaller interval.
If you set 10:00AM in TIME and 1 hour in INTERVAL then first screen shows 10:00AM and second 11:00AM. Double-click on second channel and it will be divided again in 9 screens by 10 minute (1 minute, 10 seconds and 1 second) starting from 11:00AM.

5.3.4. BACKUP

Recorded data can be archived in USB device or CD/DVD using backup function

First, insert USB device or CD/DVD and select backup menu from main menu or press backup button on remote control and below popup will show up.

- **DEVICE:** Select device for backup
- **CHANNEL:** Select channel(s) to archive
- **To AVI:** Data will be archived in AVI format

  If unchecked "To AVI", data will be archived in PS format and backup viewer program will be automatically copied.
- **TIME STAMP:** Insert time stamp into AVI file
- **FROM/TO:** Input starting time & ending time

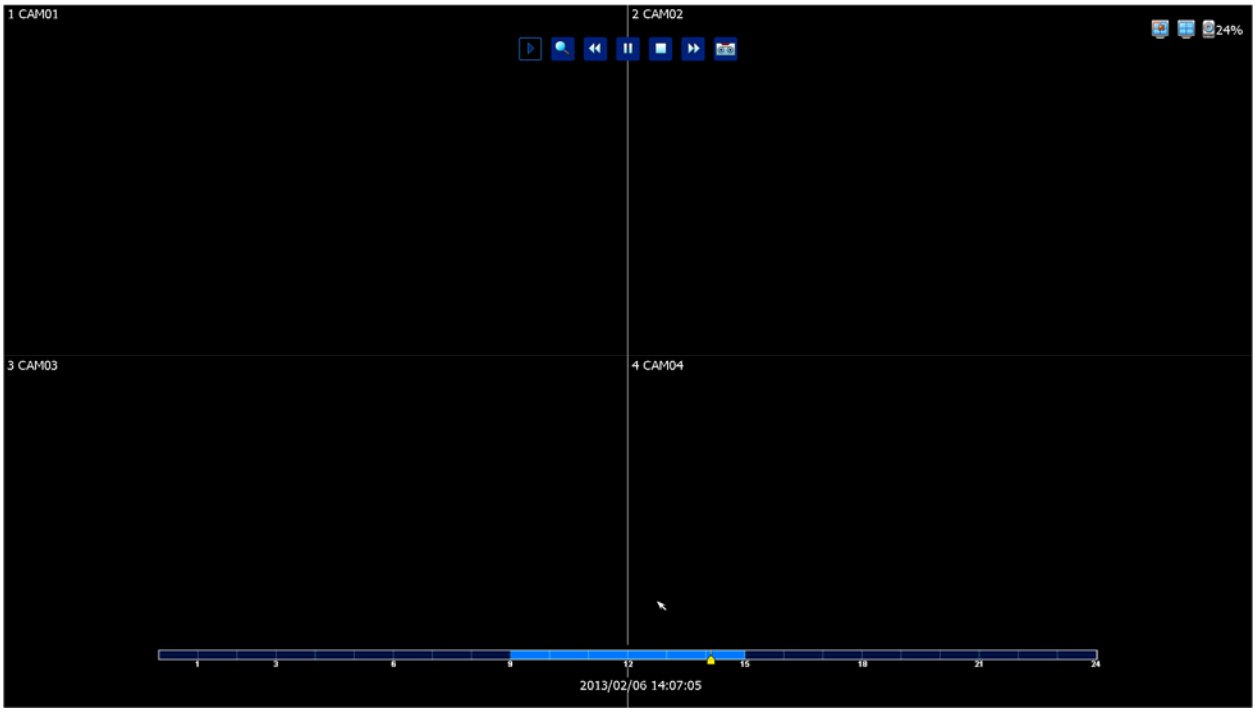
  Without having to input time directly, 1 minute ~ 60 minutes of backup can easily be made.

5.3.5. SEARCH MODE

When DVR is in search mode, you can play, pause, rewind & fast-forward (x2, x4, x8, x32 and x128)

If you move mouse cursor at the bottom of screen, time bar pops up and you can drag and move the time in the bar. Time bar contains 24 hours and time of recording data is indicated in brighter blue.

For more detailed description of icons, please refer to page 20, **4.3.2. Controlling playback using the buttons**



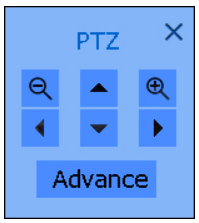
5.4. Other functions

PTZ, backup, log view and audio settings can be made

5.4.1. PTZ

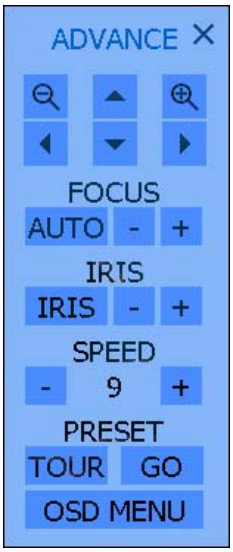
- If you press P/T button of remote control or select PTZ in main menu, screen will be changed to FULL screen mode and you can control PTZ camera.
- If you press advance button in PTZ window, PTZ- ADVANCE window will pop-up.

5.4.1.1. PTZ BASIC



- Press ◀▶▲▼ button and camera will pan to left / right or tilt up / down.
- Press ◀◀ / ▶▶ button or search / log button of remote control or click (+), (-) button and camera will zoom in or out.
- Press numeric button of remote control and target camera will be changed.

5.4.1.2. PTZ ADVANCE



- FOCUS

  \+ : Focus-IN.

  \- : Focus-OUT

  AUTO : AUTO-FOCUS mode.

- IRIS

  \+ : Open Iris.

  \- : Close Iris.

  AUTO : AUTO-IRIS mode.

- SPEED

  \+ : The control speed will increase.

  \- : The control speed will decrease.

- PRESET

  If you want to go to a specific PRESET-position, select “GO” button.

  If you want to scan PRESET-positions, select “SCAN” button

◆ **NOTE:**

- The PRESET-positions are set by PRESET menu [MENU → SETUP → CAMERA → PRESET]

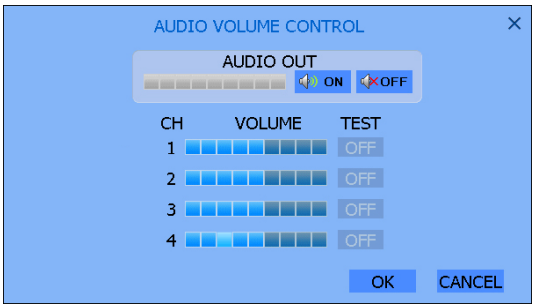
- The SCAN-lists are set by SCAN-POINT menu [MENU → SETUP → CAMERA → SCAN-POINT]

- OSD MENU

  If you click OSD MENU icon in case that Camera itself has OSD function, The OSD will be shown in accordance with Camera's OSD. If OSD is not supported by Camera, OSD MENU does not work.

  - **NOTE: OSD Control function supports only for "PELCO-D" protocol**

5.4.2. Audio

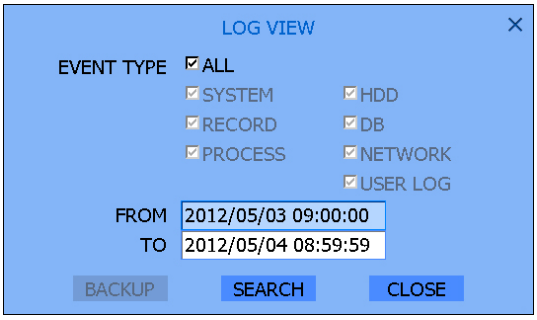


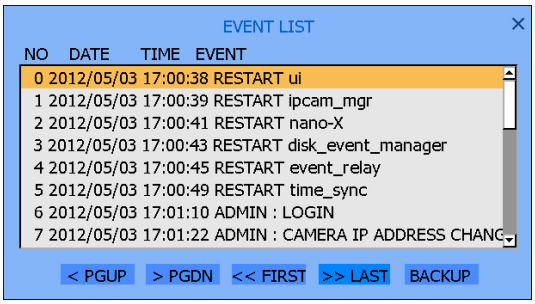
Before using this function, make sure audio in/out device has been installed correctly. (Refer to page

- Audio out works only in 1CH full screen mode
- Test audio by TEST ON/OFF button

5.4.3. Log view

System log status can be found or saved into USB memory to check on PC.




EVENT LIST
NO DATE TIME EVENT
0 2012/05/03 17:00:38 RESTART ui
1 2012/05/03 17:00:39 RESTART ipcam_mgr
2 2012/05/03 17:00:41 RESTART nano-X
3 2012/05/03 17:00:43 RESTART disk_event_manager
4 2012/05/03 17:00:45 RESTART event_relay
5 2012/05/03 17:00:49 RESTART time_sync
6 2012/05/03 17:01:10 ADMIN : LOGIN
7 2012/05/03 17:01:22 ADMIN : CAMERA IP ADDRESS CHANG
< PGUP
> PGDN
<< FIRST
>> LAST
BACKUP

- **EVENT TYPE:** Select event type to see logs.
- **FROM:** Input staring time
- **TO :** Input ending time
- **BACKUP:** Save log data into USB memory
- **SEARCH:** Click SEARCH button and log list will be shown
- **EVENT LIST:** Logs of checked EVENT TYPE will be

5.5. OSD OFF

Select OSD OFF then OSD (icons or time) will disappear/appear.

Please see the page 22 to get more information. [SETUP->DISPLAY->OSD]

5.6. REC

Select REC button on main menu, on remote control or on front panel. Then, all channels will record regardless of previous recording schedule setup. This function can be used when unexpected incident occurs in channels that are not recording by operator meaning panic or instant recording. One more REC makes DVR go back to the previous recording schedule setup.

- Example: While only channel 2,3 and 4 are recording by the current recording schedule, unexpected incident is happening on channel 1 so channel 1 needs to be recorded.
  In this case, select REC function instantly on remote control or on front key. Then all channels will be recorded.

5.7. LOG OUT

Select LOG OUT button and DVR will go in logged out status.

You cannot control DVR and change settings of DVR in logged out status. In order to log in again, press any button of remote control or front key or click mouse button on any spot of screen.

◆ **NOTE: When DVR goes in logged out status, all channel might be blocked by covert according to settings in page 38. (If USER >> MONITOR is on, all channel will be blocked by black screen in logged out status.)**

Specification

MODEL		HD SDI 4CH DVR	HD SDI 8CH DVR
Compression Algorithm		Video : H.264, Audio : G726	
Operating System		Embedded Linux	
Multi-Operation		Pentaplex (Live, Recording, Playback, Backup, Network)	
Video	**Input**	4CH	8CH
	Input Signal	HD SDI	
Video Out	**HDMI**	1	
	VGA	1	
	Composite	1	
Spot Out	**VGA**	1	
	BNC	1	
Audio	**Input**	4	8
	Output	1 (HDMI, RCA)	
Interface	**USB 2.0, RS-485**	2 x USB, 1 x RS-485	
	E-SATA	1	
	Ethernet	1	
	Sensor Input	4	8
	Alarm Output	4 (2 x Relay, 2 x TTL)	
	SATA	Max. 4 x SATA HDD or 2 x SATA HDD + 1 x ODD	
Live	**Resolution**	1920 x 1080	
	Display Mode	1, 4	1, 4, 9
	Digital Zoom	Up to x 10	
Recording	**Speed & Resolution**	Total 60FPS(50FPS) @ 1080P or 120FPS(100FPS) @ 720P	
	Mode	Manual / Continuous / Schedule / Motion / Sensor & Pre/Post, Panic	
Playback & Backup	**Search**	Search by Time, Calendar , Events, Thumbnail and First/Last Search	
	Backup Device	USB Memory Stick/HDD, DVD-RW & Backup by Network	
	Backup File Format	AVI (With or Without Timestamp), PS (Playback in Backup-Viewer)	
Events & Alarm		Email & FTP Notification / Alarm-out / Buzzer for Events & Video Loss Warning Message & Buzzer for HDD Over-Temperature	
Network	**Transmission**	Video Dual-Stream (Local recording & Network Transmission) Bandwidth adjustable (64/128/256/512Kbps, 1/2/4/10Mbps, Unlimited)	
	C.M.S/Web	6 Monitors, Live , Event Manager, E-Map, Playback, Backup , PTZ, DVR Setup	
Power		DC12V, 5.83A	
Operating temperature & humidity		5~40 ℃ / 20~80% RH	
Dimension (W x D x H)		380 x 342 x 67, Packing: 450 x 425 x 170 (mm)	

Trouble shooting

In the event of a product malfunction, please check the following list for a usual and possible solution before requesting service.

1. Product is not turned on.

Check out whether the power is being supplied well.

2. Product continues displaying “Loading” or “Starting UI….”

Check the product can boot without HDD

If product continues displaying “Loading” or “Starting UI….” Without HDD, you can try emergent upgrade.

Please refer method of factory default in provided CD

3. Camera video is not displayed on monitor

Check the video input / output connections on the product rear panel.

Check the camera status and the connection between camera video/power cable.

Check if **CAMERA STATUS** in menu is **SHOW.**

4. I cannot hear Audio

Check the audio input/output connections on the rear panel of DVR.

Audio works only in full screen mode.

5. I can’t stop recording by remote controller or REC button

Check out that RECORD CONTINUOUS of REC OPTION of MENU is OFF.

6. I can’t find previous recording data.

The product operates automatically **O**VERWRITE function. It deletes the oldest recording data to overwrite when HDD is full.

7. Product is not compatible with external USB device.

Please check if USB memory stick is in protection (password) function. Protection function of USB device should not be discharged.

8. I can’t connect to network.

Check if network of menu is setting correctly such as Network port, ID, Password

Check if your internet line is available. Please ask your service provider to check internet line.

If the problem you are experiencing persists or is not mentioned above, please contact service center or your local distributor.